AMENDMENT TO THE CLAIMS

1. (Previously presented) A method for operating an automotive engine comprising fuel injectors that open to deliver fuel to the engine, said method comprising:

providing a mechanical returnless fuel system for supplying fuel to the fuel injectors and including a fuel pump having a pump output, wherein the pump output is substantially constant;

providing a controller for regulating an opening time for the fuel injectors to deliver a precise quantity of fuel;

providing a diaphragm-less regulating valve disposed within a fuel tank for returning a portion of said pump output to the fuel supply, said diaphragm-less regulating valve outputting a non-constant linear output pressure to said fuel injectors;

determining a projected engine fuel demand, said pressure regulating valve producing a fuel pressure that varies as a function of engine fuel demand;

determining an estimated fuel pressure of said mechanical returnless fuel system in response to the projected engine fuel demand, said projected engine fuel demand correlating to a fuel flow rate, said determination of an estimated fuel pressure is based on a fuel pressure-fuel flow rate relationship where said fuel pressure varies linearly with said fuel flow rate; and

determining an opening time for said fuel injectors based upon the estimated fuel pressure.

2. (Canceled)

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3. (Previously presented) The method of claim 1 wherein the step of determining an estimated fuel pressure based off of said fuel pressure/fuel flow rate relationship comprises using a look-up table.

4. (Canceled)

5. (Original) The method of claim 1 wherein the automotive engine comprises a fuel rail for distributing fuel to said injectors, and wherein the estimated fuel pressure corresponds to the fuel pressure within the fuel rail.

6. (Currently amended) In combination,

an automotive engine comprising fuel injectors that open for an opening time for delivering fuel to said engine;

a mechanical returnless fuel system for supplying fuel to said fuel injectors from a fuel supply, said mechanical returnless fuel system comprising a fuel pump having a pump output, a fuel line connecting the fuel pump to the fuel injectors and a diaphragm-less pressure regulating valve disposed within a fuel tank for returning a portion of the pump output to the fuel supply, wherein the pump output is substantially constant; and

a controller for regulating the fuel injectors, wherein the controller determines a projected engine fuel demand, determines an estimated fuel pressure based upon the projected engine fuel demand, and determines the opening time of the fuel injectors based upon the estimated fuel pressure;

wherein the pressure regulating valve produces a fuel pressure in said fuel line that varies based upon actual engine fuel demand.

7. (Canceled)

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8. (Original) In combination according to claim 6 wherein the controller comprises a look-up table for determining estimated fuel pressure.

9. (Original) In combination according to claim 6 wherein the fuel line includes a fuel rail, and wherein the estimated fuel pressure corresponds to the fuel pressure of fuel within said fuel rail.

10. (Canceled)

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